International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 10, 2020
ISSN: 1475-7192

Functional Health Literacy Level among the Workers of the Faculty of Medicine at Zagazig University

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Abstract

Background*: Health literacy has been identified as a key factor to improve health and well-being and decrease health inequities. Public Health England has described HL as the "bridge between people and health settings," reflecting how patients can evaluate, use healthcare information system and navigate the services available to them.*

Study design*: A cross sectional was carried out at the faculty of medicine, Zagazig University; Sharkia governorate; Egypt included a comprehensive sample of the workers of the faculty of medicine who were 59 individuals.*

Methods*: Socio-demographic features were assessed by* ***Fahmy (2015)*** *questionnaire. The Swedish functional health literacy scale (S-FHL scale) Arabic version to assess Functional health literacy (FHL).*

Results*: It was found that 62.7% of the workers were in the age group of ≥50 years, 78% of the studied participants were males, 89.8% were married, 86.4% were from rural areas and 74.6% were moderate social class. Regarding to the level of Functional health literacy, it was found that most of the workers (72.9%) had inadequate FHL, 23.7% had problematic FHL and only 3.4% had sufficient FHL. Regarding to social determinants of health, it was found that 83.8% of those above 50, 65.9% of the moderate social class and 91.3% of those above thirty years of experience had inadequate FHL, while 75% of secondary or diploma had problematic FHL.*

Conclusion*: The workers staff of the faculty of medicine Zagazig University; Egypt had inadequate functional health literacy. Age, social class, educational level and years of experience statistical significant relationwith FHL level of the workers.*

Keywords*: Functional - Health Literacy- Swedish (S-FHL scale) - Workers*

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I. Introduction

The idea of health literacy emerged from the history of defining, redefining, and quantifying the functional literacy needs of the citizens **(Berkman *et al.*, 2010).** According to the Institute of Medicine (IOM) health literacy is a result from the individuals' interaction with the social and informational needs of the health contexts in their environment, which include contexts of health care, contexts of public health, contexts of health promotion or contexts of chronic disease management **(Kindig, 2004).**

Health literacy has been defined in many different ways as it has a multidimensional concepts **(Batterham *et al.*, 2016).** The Institute of Medicine defined HL as "The degree to which individuals have the capacity to obtain, process and understand basic health information and services needed to make appropriate health decisions" **(Kindig, 2004).** The meanings of health literacy extend beyond the ability to read pamphlets and make appointments **(Nutbeam, 1998),** it includes the capability to read, understand and use healthcare information to make proper health decisions and follow the instructions of treatment **(Nutbeam, 2000).**

Functional health literacy (FHL) is concerned with the individuals' ability to read health-related information in order to maintain and improve their health" **(Almaleh *et al.*, 2017).**The term of FHL has been defined as "Skills which allow an individual to read consent forms, medicine labels, and health care information and to understand written and oral information given by physicians, nurses, pharmacists, or other health care professionals and to act on directions by taking medication correctly, adhering to self-care at home, and keeping appointment schedules"**(Kanj and Mitic, 2009).**Recently (FHL) has been expanded to include numerical understanding, and the ability to read and understand graphical representations; basic knowledge of the structure and function of the human body; and knowledge about factors that can cause risks for health **(Smith *et al.*, 2013)**. Adequate (FHL) level is important because it makes the patient empowered and more aware about health leading to decrease the burden on patients for seeking out health services **(Moeini*et al.*, 2019).**

Limited health literacy level is a clinical risk factor and associated with over hospitalization, overuse of health care services and emergency room visits. Some studies revealed that the underuse of the previously mentioned items due to lack of literacy skills **(Goto*et al.*, 2019).** People with limited HL are also unable to understand the health care instructions well which lead to patient non-compliance, improper care, swinging rates of hospitalization and high mortality rates **(Moeini et al., 2019)**, misuse of medications, increase drug adverse effect, bad health outcome and increase in the healthcare costs **(AbuAlreesh and Alburikan, 2019)**.

The objectives of this study are to assess the level of functional health literacy among the workers of the Faculty of Medicine at Zagazig University and to determine some factors affecting its level.

II. Subject and Methods:

1- Design and Sample

This study was held in the faculty of medicine, Zagazig University, Sharkia governorate in the period fromAugust 2019 to June 2020.A comprehensive sample of the workers of the faculty were included who were 59 workers (36 workers at the administrative building and 23workers at the academic building)

Inclusion criteria: Workers of the faculty of medicine at workforce.

Exclusion criteria: Workers refused to participate.

2- Study tools:

a) Socio-demographic questionnaire of Fahmy2015**(Fahmy*et al.*, 2015)** thatincludes eight domains with total score (48): Educational level of the person and partner, previous occupation of the person and partner, computer use, income, size of family, crowding index, sewage and refuse disposal.

b) The Swedish Functional Health Literacy scale (S-FHL) to measure FHL level. The Swedish version originated from the original JFHL scale after its translation into Swedish language by a group of 4 professionals (two from a university and two from translation agencies) who had experience in the health domain. This version was developed to be used in health promotion and health prevention which means that it is related to a greater extent to a public health context. This scale is easy to use, satisfactory concerning structure and content and covering the major aspects of functional health literacy as defined in the previous literatures **(Wångdahl and Mårtensson, 2015).**

The S-FHL scale has a validated translated Arabic version that consists of five items to assess FHL. It was selected to be used in our study as it is short, flexible, easy to analyze and has a practical nature that makes it suitable to determine health literacy level in a population-based study **(Amoah and Phillips, 2018)**. Each of the S-FHL's five items has five response options: 'never', 'seldom', 'sometimes', 'often', and 'always'. According to responses, the participants were divided into three categories of FHL: sufficient, problematic and inadequate.

Sufficient FHL means that the participants have the basic skills that enable them to read information and instructions about health. Inadequate FHL means that participants lack any of the basic skills. While problematic FHL is referring to those in between.

Participants who respond by 'often' or 'always' at least once are categorized as having inadequate FHL, while participants who respond only by 'never' or 'seldom' to all questions are categorized as having sufficient FHL. Otherwise, participants are categorized as having problematic FHL, i.e. responding to at least one question by 'sometimes' and no responses with 'often' or 'always' **(Wångdahl*et al.*, 2015).**

3-Approvals and Ethical committee:

- An official written administrative permission letter was taken from the manager of the faculty.
- Permission from Institutional Review Board (IRB) for medical research ethics, Zagazig University, Faculty of Medicine (ZU-IRB) was taken. ZU-IRB #5288/6-3-2019
- The title and objectives of the study were explained to the participant before starting the study and an oral consent was taken from them to be sure that they were accepting the participation in the study.

4- Statistical analysis:

- Collection, tabulation and analyzing data statistically were done by computer using Statistical Package of Social Services version 22 (SPSS).
- Frequencies and relative percentages were used to represent qualitative data.
- Calculating the difference between qualitative variables was done by using Chi square test.
- Quantitative data were expressed as mean ± SD (Standard deviation).
- The levelof significance for the statistical tests is fixed at 5% level (P-value). P value of <0.01 indicates highly significant results. P value of ≤0.05 indicates significant results. P value of > 0.05 indicates non-significant results.

III. Results

The present study comprised of 59 workers, 62.7% of the workers were in the age group of ≥50 years, 78% of the studied participants were males, 89.8% were married, 86.4% were from rural areas and 74.6% were moderate social class**(Table 1)**.

Table (1): Special Characteristics of the studied group:

Variables	Workers No (59)	
	N	%
Age		
• **24-36**	2	3.4
• **37-49**	20	33.9
• **≥50**	37	62.7
Gender		
• **Male**	46	78.0
• **Female**	13	22.0
Marital status		
• **Single**		

• **Married** • **Widow**	2 53 4	3.4 89.8 6.8
Residence • **Urban** • **Rural**	8 51	13.6 86.4
Social class • **igh** • **Moderate** • **ow**	1 44 14	1.7 74.6 23.7
Education • **Can't read and write** • **Can read and write** • **Secondary or diploma**	21 30 8	35.6 50.8 13.6
Occupational degree • **3rd degree**	59	100
Years of experience • **< 10** • **10- <20** • **20- <30** • **>30**	2 14 20 23	3.4 23.7 33.9 39.0

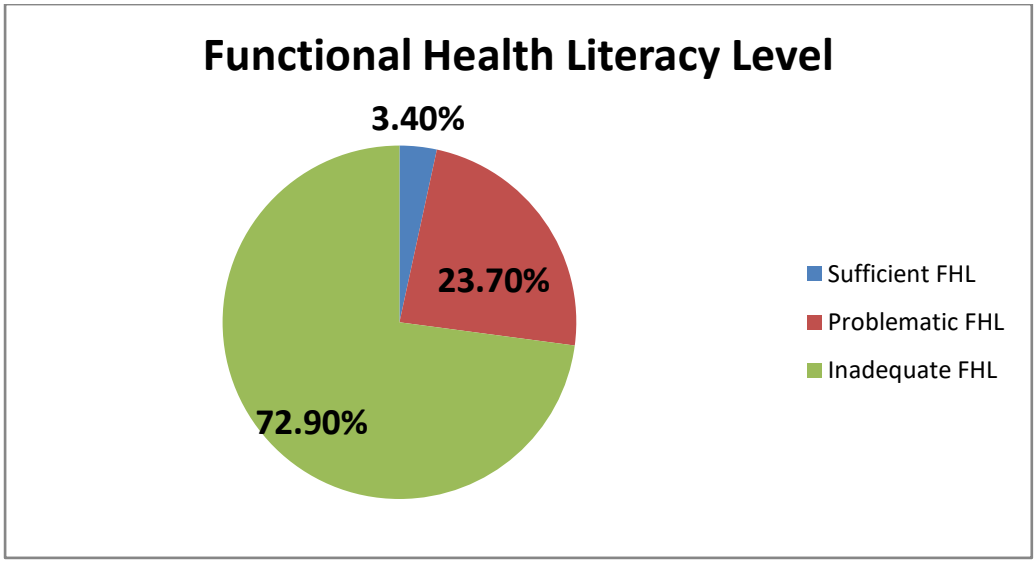

Figure 1 showing the level of Functional health literacy of the workers.

Regarding to the level of Functional health literacy, it was found that most of the workers (72.9%) had inadequate FHL, 23.7% had problematic FHL and only 3.4% had sufficient FHL**(Figure 1)**.

Table 2 shows that there was statistical significant relation with age (100% of the age group 24-36 years and 83.8% of those above 50 had inadequate FHL), social class (65.9% of the moderate social class had inadequate FHL), the education level (75% of secondary or diploma had problematic FHL) and with the years of experience (91.3% of those above thirty years of experience had inadequate FHL). There was no statistical significant relation with the remaining items.

Table (2): Relationship between socio-demographic factors and level of FHL of the studied group:

Variables	Functional health literacy level							
	Sufficient (N=2)		Problematic (N=14)		Inadequate (N=43)		χ^2	P
	N	%	N	%	N	%		
Age								
• **24-36** (n=2)	0	0.0	0	0.0	2	100.0	9.728	0.045
• **37-49** (n=20)	2	10.0	8	40.0	10	50.0		
• **≥50** (n=37)	0	0.0	6	16.2	31	83.8		

Gender								
• **Male** (n=46)	2	4.3	12	26.1	32	69.6	1.369	0.504
• **Female** (n=13)	0	0.0	2	15.4	11	84.6		
Marital status								
• **Single** (n=2)	0	0.0	0	0.0	2	100.0	2.485	0.647
• **Married** (n=53)	2	3.8	14	26.4	37	69.8		
• **Widow** (n=4)	0	0.0	0	0.0	4	100.0		
Residence								
• **Urban** (n=8)	0	0.0	0	0.0	8	100.0	3.444	0.179
• **Rural** (n=51)	2	3.9	14	27.5	35	68.6		
Social class								
• **High** (n=1)	0	0.0	1	100.0	0	0.0	9.518	0.049
• **Moderate** (n=44)	2	4.5	13	29.5	29	65.9		
• **Low** (n=14)	0	0.0	0	0.0	14	100.0		

Variables	**Functional health literacy level**							
	Sufficient (N=2)		**Problematic (N=14)**		**Inadequate (N=43)**		χ^2	**P**
	N	**%**	**N**	**%**	**N**	**%**		
Educational level :								
• **Can't read and write** (n=21)	0	0.0	0	0.0	21	100.0	34.655	<0.001
• **Can read and write** (n=30)	0	0.0	8	26.7	22	73.3		
• **Secondary or**								

diploma (n=8)	2	25.0	6	75.0	0	0.0		
Years of experience								
• **< 10** (n=2)	0	0.0	0	0.0	2	100.0	14.611	0.024
• **10- <20** (n=14)	2	14.3	6	42.9	6	42.9		
• **20- <30** (n=20)	0	0.0	6	30.0	14	70.0		
• **>30** (n=23)	0	0.0	2	8.7	21	91.3		

Table (3): Frequency distribution of the Swedish functional health literacy questionnaire of the studied group:

Questions	Workers No (59)				
	Always	**Often**	**Sometimes**	**Seldom**	**Never**
	%	**%**	**%**	**%**	**%**
Q1: Do you think that it is difficult to read health information because the text is difficult to see (even if you have glasses or contact lenses)?	49.2	16.9	27.1	3.4	3.4
Q2: Do you think that it is difficult to understand word or numbers in health information?	47.5	23.7	22.0	3.4	3.4
Q3: Do you think that it is difficult to understand the message in health information?	32.2	13.6	30.5	18.6	5.1
Q4: Do you think that it takes a long time to					

read health information?					
Q5: Do you ever ask someone else to read and explain health information?	39.0	6.7	37.3	6.8	10.2
	39.0	18.6	35.6	6.8	0.0

With regards the Swedish functional health literacy questionnaire**(Table 3)**, it was found that 49.2% of the workers always found it difficult.to read health information because the text was difficult to see even if they had glasses or contact lenses **(Question 1)**, 47.5% of them always thought that it was difficult to understand word or numbers in health information **(Question 2)**, 32.2% of them always thought that it was difficult to understand the message in health information **(Question 3)**, 39% of them always thought that it took a long time to read health information **(Question 4)** and finally39% of the workers mentioned that they always asked someone else to read and explain health information **(Question 5)**.

IV. Discussion

Health literacy is considered as an important clinical parameter as it plays a major role in improving health status, health outcomes, empowering patients, reducing healthcare inequalities **(Davis *et al.*, 2020)** and acquiring self-management behavior **(Dahal and Hosseinzadeh, 2020)**.The term of Health literacy is confused with the individual's reading, comprehension, use of language and math skills, however it involves much more. Health literacy is a core stone in empowering, engaging, and activating an individual in a person-centered care model **(Pelletier *et al.*, 2014).**

This study was held at the faculty of medicine at Zagazig University and it included 59 workers (78% male and 22% female) at workforce **(Table 1)**. The study aimed to evaluate the level of FHL and possible risk factors affecting its level among the workers at workforce.

Regarding to FHL level**, Wångdahlet al. (2014)** showed that 79.8% had limited FHL**(Figure 1)**. This is consistent with the current study which demonstrated that 72.9% of the workers had limited FHL level.The present finding is against that of **Youssef and Sebaee (2018)**that stated 57.1% had limited FHL level and this difference may be due to the use of another assessment tool (S-TOFHLA) to measure FHL which mainly depends on traditional reading and computational abilities.

There was a statistical significant relation between the ages of the workers and their FHL level as half of the (37-49) age group and most (83.8%) of the age group ≥50 had inadequate FHL, while only 16.2% of the age group ≥50 had problematic FHL **(Table 2)**. This is consistent with the result of **Wångdahlet al. (2014)** who revealed that there was statistical significant relation with age as 55.5% of the age group 25-44 and 75% of the age group ≥45 years had inadequate FHL, while only 13.2% of the age group ≥45 years had problematic FHL level and consistent with **Haghdoost et al. (2015)** and **Ho et al. (2020)** who reported a statistical significant relation between the ages of the participants and their level of health literacy.

With regard to the Swedish functional health literacy scale (S-FHL) among the workers, **table 3**showed that47.5% of the workers always thought that it was difficult to understand word or numbers in health information **(Question 2)** and 32.2% of the workers always thought that it was difficult to understand the message in health information **(Question 3)**. Also 4 39% of the workers always thought that it took a long time to read health information **(Question 4)**. This is in concordance with **Finbråten (2018)** who reported that 40% of his participants mentioned that it was always or often difficult to understand word or numbers in health information, 35% found it was always or often difficult to understand the message in health information and34% thought that it always or often took a long time to read health information and this is due to that FHL depending mainly in the education of the participants which provide them with the ability to read and understand health information.

The limitations of this study is that it was only restricted to the workers of the faculty of medicine with their special characteristics.

V. Recommendations

- Further studies are needed to assess the level of functional health literacy in different areas with large sample size in order to identify more causes of limited health literacy and to put plan to overcome them.
- Health education for individuals to increase their awareness about the importance of health literacy in and its role in improving their health outcome

Conflict of interest: the authors had no conflict of interest.

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